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(84) Designated contracting states: (72) Inventor: YOKOTA YOSHIHIRO NISHIMATSU SHIGERU **ICHIKAWA NORIO**

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(54) **SEMICONDUCTOR ETCHING METHOD**

(57) Abstract:

PURPOSE: To enable a deep etching having high pattern accuracy, by selectively etching a semiconductor substrate by a microwave plasma etching in an atmosphere gas over the fixed pressure without containing carbon.

CONSTITUTION: An Si substrate is prepared whereon a sensor region is formed at a fixed part of the main surface 12, and an SiO2 film is selectively formed on the main surface 11 of this substrate. As the SiO2 film selectively formed on the main surface 11, the part corresponded to a recess 14 and pelletizing grooves 13 is opened window. Next, a microwave plasma etching is applied to this Si substrate. In this case, a gas selected from gasses not containing carbon e.g. SF6, NF3, F2, XeF2 is used as the atmosphere gas, and the pressure of the atmosphere gas is set 5×10-4Torr or more. Thereby, the Si substrate 1 for a semiconductor sensor is obtained which has a deep and high pattern accuracy recess 14 and groove 13.

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